



# RECOVERED CHEMICAL MATERIEL DIRECTORATE FACT SHEET

## RCMD OVERVIEW

The U.S. Army Chemical Materials Activity's (CMA) Recovered Chemical Materiel Directorate (RCMD) provides centralized management and direction to the Department of Defense for the assessment and disposal of recovered chemical warfare materiel (RCWM) in a safe and environmentally sound manner.

RCMD leads the nation in the development and utilization of advanced technology to destroy RCWM. In 1997, the United States entered into force on the Chemical Weapons Convention (CWC), an international treaty requiring the destruction of chemical weapons.

In support of the CWC, RCMD maintains destruction technology and personnel expertise to continue to destroy RCWM around the country. RCMD personnel and equipment provide:

- Tools, tactics and technologies to strengthen the Soldier's knowledge base in the assessment and treatment of chemical warfare materiel (CWM).
- Proven transportable assessment and treatment technologies to quickly respond to unplanned CWM recoveries on site; such recoveries are most often in response to CWM unearthed during range clearing operations and from relic burial sites.
- Flexible assessment and treatment options for chemical stockpile destruction challenges, augmenting CMA and the Program Executive Office for the Assembled Chemical Weapons Alternatives missions, as needed.



REV: 05062016

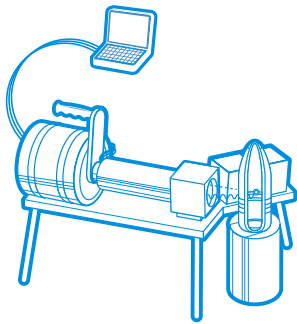
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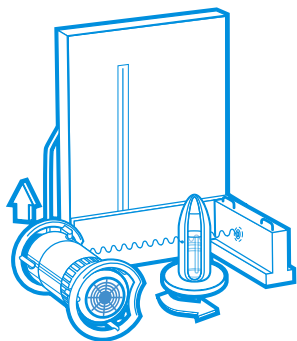
RCMD's proven assessment technologies provide critical information on site during suspect chemical warfare recoveries, determining whether a munition is explosively configured or contains chemical agent. When items are identified as chemical, treatment technologies safely and effectively destroy munitions of all shapes and sizes—providing complete containment of the neutralization process while protecting operators, the community and the environment.

## ASSESSMENT TECHNOLOGIES:



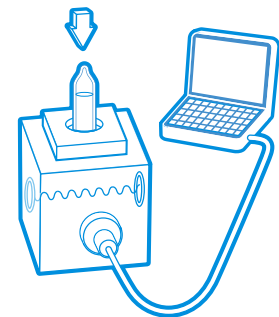
### Portable Isotopic Neutron Spectroscopy System (PINS)

**PINS** accurately detects the presence of chemical elements by using neutron particles to produce a unique energy spectrum emitted by chemicals inside the munition.



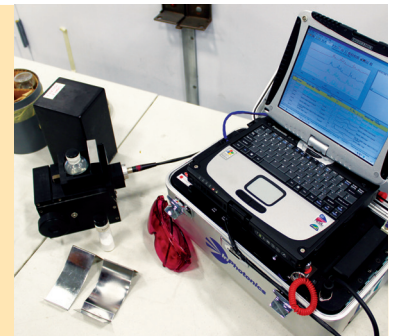
### Digital Radiography and Computed Tomography System (DRCT)

**DRCT** uses X-ray technology to vertically scan recovered munitions on a rotating platform, reproducing a high-quality digital image of their interiors to determine whether a liquid fill is present as well as the explosive potential of the item.



### Raman Spectrometer

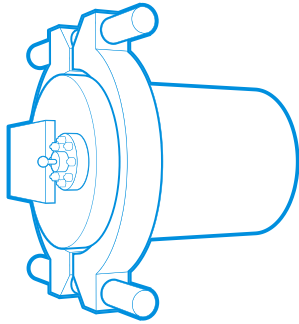
**Raman Spectrometer** identifies the contents of glass bottles that were part of Chemical Agent Identification Sets (CAIS), used for training decades ago. This technology uses a fiber optic probe and laser.



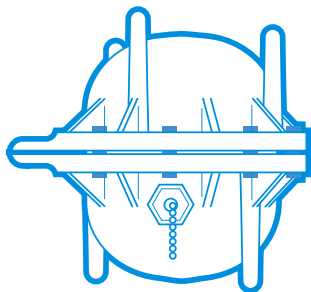
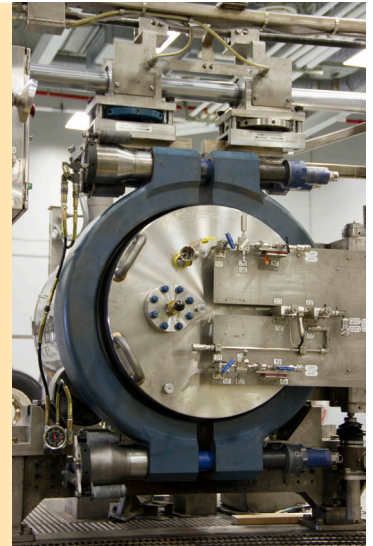


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## TREATMENT TECHNOLOGIES:

**Explosive Destruction System (EDS)**

**EDS** is a total containment system that uses cutting charges to explosively access chemical munitions, eliminating their explosive capacity before the chemical agent is neutralized. The system's main component—a sealed, stainless steel vessel—contains all the blast, vapor and fragments from the process. Treatment is confirmed by sampling residual liquid and air from the vessel prior to reopening the EDS. RCMD maintains five transportable EDS units to support both planned and quick-response operations.

**Single CAIS Access and Neutralization System (SCANS)**

**SCANS** treats small quantities of chemical agent found in CAIS items. CAIS items were used to train Soldiers in the identification and disposal of chemical warfare agent.





## RCMD ACHIEVEMENTS

As part of treaty destruction mandates beyond the elimination of the nation's stockpile, the U.S. Army assigned the Project Manager for Non-Stockpile Chemical Materiel Project (NSCMP, now RCMD) with destruction missions, all safely completed ahead of treaty schedule:

**Treaty-Declared Recovered Chemical Warfare Materiel – Completed April 2010:** This category includes all CWM treaty items declared prior to entering into force of the CWC. In April 2010, operators at the Pine Bluff Explosive Destruction System located at Pine Bluff Arsenal, Arkansas, destroyed the last munition in its inventory—marking the destruction of all non-stockpile materiel declared prior to the United States' entry into force of the CWC.

**Binary Chemical Weapons – Completed November 2007:** Binary chemical weapons were designed to form lethal chemical agents by mixing two non-lethal chemicals during flight to a target. NSCMP safely completed destruction of the binary chemical weapon inventory.

**Former Chemical Warfare Production Facilities – Completed December 2006 (four months ahead of the deadline):** These included government facilities and equipment that produced chemical agent, precursors and components for chemical weapons. NSCMP completed destruction of the facilities, located at Newport Chemical Depot, Indiana; Pine Bluff Arsenal, Arkansas; Rocky Mountain Arsenal, Colorado; Aberdeen Proving Ground, Maryland; and Muscle Shoals, Alabama.

**Miscellaneous Chemical Warfare Materiel – Completed 2002:** This category includes unfilled munitions, support equipment and devices designed for use with chemical weapons. These include: complete assembled rounds without chemical fill and with or without bursters and fuzes; stimulant-filled munitions; inert munitions; dummy munitions; bursters and fuzes; empty rocket warheads and motors; projectile cases; other metal and plastic part components; research and development compounds; chemical samples; and ton containers.

**Research and Development – Ongoing:** RCMD is responsible for the past and continuing development of and improvements to assessment and destruction technologies that support its missions.



*NSCMP was tasked with the destruction of all of the nation's former chemical weapons production facilities, including Newport Chemical Depot, Indiana, which housed the plant that produced the U.S. stockpile of the nerve agent VX.*



*NSCMP's wet air oxidation (WAO) facility in Texas treated wastewater from the neutralization of binary chemicals, the final step in the project to destroy binary chemical weapons.*

